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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,880	02/20/2004	Tien-Ming Hsu	8688.411US01	4240

23552 7590 09/18/2008

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EXAMINER	
GODBOLD, DOUGLAS	
ART UNIT	PAPER NUMBER
2626	
MAIL DATE	DELIVERY MODE
09/18/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/781,880	HSU, TIEN-MING	
	Examiner	Art Unit	
	DOUGLAS C. GODBOLD	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *23 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to correspondence filed June 23, 2008 in reference to application 10/781,880. Claims 6-16 are pending in the application and have been examined.

Response to Arguments

2. Applicant's arguments with respect to claims 6-16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 6-9, and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA) in view of Chambers et al. (US PAP 2001/0047263).

5. Consider claim 6, the APA teaches a voice interactive system (a system is inherent in the APA in order to implement features below) comprising:

a detecting module adapted for performing voice recognition upon an input voice signal to detect presence of a predetermined keyword (a confirmation procedure is required in the Talk-to-Talk mode when issuing a voice command. In the Talk-to-Talk

mode, the confirmation procedure involves the presence of a keyword in the issued voice command so as to minimize occurrence of unwanted responses; spec page 3, lines 8-12.);

a semantic recognition module coupled to and controlled by said detecting module so as to switch operation from a disabled mode to an enabled mode, where said semantic recognition module performs semantic recognition upon the input voice signal, when the presence of the predetermined keyword in the input voice signal is detected by said detecting module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7. Semantic analysis is inherent in the system of example of page 3 of talk-to-talk system.);

a response module coupled to and controlled by said semantic recognition module so as to generate a response according to result of the semantic recognition performed by said semantic recognition module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7.).

But the APA does not specifically teach:

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a

current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold; and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold.

In the same field of voice control systems, Chambers teaches:

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold (figure 3, a timer monitors the amount of time passing between detected words or phrases. Timeout occurs if period is longer than a given time; paragraph 0028); and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold (figure 3; timeout 307, deactivate microphone 309; paragraph

0028. when combined with the talk to talk of APA, it would be obvious to return recognizer to look for attention words instead of deactivating the microphone.).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the timing method of Chambers with the voice control system of the APA in order to provide a mechanism to disable the semantic analysis when no response is given in order to prevent unwanted responses.

6. Consider claim 7, the APA teaches the voice interactive system as claimed in claim 6, wherein said response module includes an operation control module for generating a signal corresponding to the result of the semantic recognition performed by said semantic recognition module, said operation control module being adapted to transmit the signal generated thereby to an electronic device such that the electronic device operates in response to the signal (In the example, it is assumed that the system keyword is "Jack", and the electronic device that incorporates the voice interactive system is a multi-media playback apparatus: User: Jack, activate the CD player. System: All right, I'll activate the CD player for you; spec page 3, lines 18-24.).

7. Consider claim 8, the APA teaches the voice interactive system as claimed in claim 6, wherein said response module includes a voice response module for providing artificial voice response data corresponding to the result of the semantic recognition performed by said semantic recognition module (In the example, it is assumed that the system keyword is "Jack", and the electronic device that incorporates the voice

interactive system is a multi-media playback apparatus: User: Jack, activate the CD player. System: All right, I'll activate the CD player for you; spec page 3, lines 18-24.).

8. Consider claim 9, Chambers teaches the voice interactive system as claimed in Claim 6, wherein said response module includes an image response module for providing image data that corresponds to the result of the semantic recognition performed by said semantic recognition module (paragraph 0065, visual feedback can be provided in response to recognition on a display).

9. Consider claim 12, the APA teaches a selective voice recognition system (a system is inherent in the APA in order to implement features below) comprising:

a detecting module adapted for performing voice recognition upon an input voice signal to detect presence of a predetermined keyword (a confirmation procedure is required in the Talk-to-Talk mode when issuing a voice command. In the Talk-to-Talk mode, the confirmation procedure involves the presence of a keyword in the issued voice command so as to minimize occurrence of unwanted responses; spec page 3, lines 8-12.);

a semantic recognition module coupled to and controlled by said detecting module so as to switch operation from a disabled mode to an enabled mode, where said semantic recognition module performs semantic recognition upon the input voice signal, when the presence of the predetermined keyword in the input voice signal is detected by said detecting module (voice recognition is performed upon an input voice signal,

and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7. Semantic analysis is inherent in the system of example of page 3 of talk-to-talk system.);

a response module coupled to and controlled by said semantic recognition module so as to generate a response according to result of the semantic recognition performed by said semantic recognition module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7.).

But the APA does not specifically teach:

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold; and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold.

In the same field of voice control systems, Chambers teaches:

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold (figure 3, a timer monitors the amount of time passing between detected words or phrases. Timeout occurs if period is longer than a given time; paragraph 0028); and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold (figure 3; timeout 307, deactivate microphone 309; paragraph 0028. when combined with the talk to talk of APA, it would be obvious to return recognizer to look for attention words instead of deactivating the microphone.).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the timing method of Chambers with the voice control system of the APA in order to provide a mechanism to disable the semantic analysis when no response is given in order to prevent unwanted responses.

10. Consider claim 13, the APA teaches a an electronic device (a device is inherent in the APA in order to implement features below) comprising:

a detecting module adapted for performing voice recognition upon an input voice signal to detect presence of a predetermined keyword (a confirmation procedure is required in the Talk-to-Talk mode when issuing a voice command. In the Talk-to-Talk mode, the confirmation procedure involves the presence of a keyword in the issued voice command so as to minimize occurrence of unwanted responses; spec page 3, lines 8-12.);

a semantic recognition module coupled to and controlled by said detecting module so as to switch operation from a disabled mode to an enabled mode, where said semantic recognition module performs semantic recognition upon the input voice signal, when the presence of the predetermined keyword in the input voice signal is detected by said detecting module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7. Semantic analysis is inherent in the system of example of page 3 of talk-to-talk system.);

a response module coupled to and controlled by said semantic recognition module so as to generate a response according to result of the semantic recognition performed by said semantic recognition module (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7.).

But the APA does not specifically teach:

a sound pickup module adapted for receiving an input voice signal (although it is practically inherent);

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold; and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold.

In the same field of voice control systems, Chambers teaches:

a sound pickup module adapted for receiving an input voice signal (Figure 2, microphone 207)

a timer module which operates simultaneously with operation of said semantic recognition module in the enabled mode so as to calculate an idle time between a current input voice signal and a previous input voice signal, and so as to determine whether the idle time calculated thereby is larger than a predetermined threshold (figure 3, a timer monitors the amount of time passing between detected words or phrases. Timeout occurs if period is longer than a given time; paragraph 0028); and

a mode switching module coupled to said timer module and said detecting module, said mode switching module enabling said detecting module to switch operation of said semantic recognition module from the enabled mode back to the disabled mode upon detection by said timer module that the idle time between the current input voice signal and the previous input voice signal is larger than the predetermined threshold (voice recognition is performed upon an input voice signal, and a responsive command is subsequently retrieved from a database based on the recognition result, spec page 2 lines 2-5. Talk to talk operates similarly as push to talk except a keyword is used; spec page 3, lines 7).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the timing method of Chambers with the voice control system of the APA in order to provide a mechanism to disable the semantic analysis when no response is given in order to prevent unwanted responses.

11. Consider claim 14, the APA teaches the voice interactive system as claimed in claim 13, wherein said response module includes an operation control module for generating a signal corresponding to the result of the semantic recognition performed by said semantic recognition module, said operation control module being adapted to transmit the signal generated thereby to an electronic device such that the electronic device operates in response to the signal (In the example, it is assumed that the system keyword is "Jack", and the electronic device that incorporates the voice interactive

system is a multi-media playback apparatus: User: Jack, activate the CD player. System: All right, I'll activate the CD player for you; spec page 3, lines 18-24.).

12. Consider claim 15, the APA teaches the voice interactive system as claimed in claim 13, wherein said response module includes a voice response module for providing artificial voice response data corresponding to the result of the semantic recognition performed by said semantic recognition module (In the example, it is assumed that the system keyword is "Jack", and the electronic device that incorporates the voice interactive system is a multi-media playback apparatus: User: Jack, activate the CD player. System: All right, I'll activate the CD player for you; spec page 3, lines 18-24.).

13. Consider claim 16, Chambers teaches the voice interactive system as claimed in claim 13, wherein said response module includes an image response module for providing image data that corresponds to the result of the semantic recognition performed by said semantic recognition module (paragraph 0065, visual feedback can be provided in response to recognition on a display).

14. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the APA in view of Chambers as applied to claim 6 above, and further in view of Bellegarda et al (US Patent 6,285,785).

15. Consider claim 10, APA and Chambers teaches the voice interactive system as claimed in claim 6, but does not specifically teach wherein said detecting module includes:

a feature parameter retrieving unit for retrieving feature parameters of the input voice signal;

a voice model building unit coupled to said feature parameter retrieving unit for building voice models with reference to the feature parameters retrieved by said feature parameter retrieving unit;

a keyword voice modeling unit for storage of keyword voice models; and

a voice model comparing unit coupled to said voice model building unit and said keyword voice modeling unit for comparing similarity among built voice models and the keyword voice models.

In the same field of speech recognition, Bellegarda teaches:

a feature parameter retrieving unit for retrieving feature parameters of the input voice signal (With the use of a microphone and A/D converter as the speech transducer 22 the speech is typically sampled at a 20 kHz rate and is Fast Fourier transformed; column 6, line 46.);

a voice model building unit coupled to said feature parameter retrieving unit for building voice models with reference to the feature parameters retrieved by said feature parameter retrieving unit (The role of the Markov word model for speech is to represent the pronunciation of a word. The parameters of the Markov model are trained by relating the acoustic signal produced by the speaker to the word uttered; column 7, line 50.);

a keyword voice modeling unit for storage of keyword voice models (inherent if combined with APA and smith. In order to apply Markov models to the keyword, a modeling unit is inherent.); and

a voice model comparing unit coupled to said voice model building unit and said keyword voice modeling unit for comparing similarity among built voice models and the keyword voice models (For speech, the likelihood of each Markov word model producing the input utterance is computed, after pruning by the 3-gram LM 38a, and those words resulting in the highest scores are placed on the list of word candidates (L.sub.1). In both cases (speech and handwriting), the size of the list is preferably statically set using a predetermined reasonable maximum size, such as 15, or may be set dynamically using a threshold. In the latter case, all words whose likelihoods fall within the selected threshold are maintained on the list, and the other words discarded; collumn8, lines 48-58.).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the modeling system of Bellegarda with the voice recognition system in order to provide a robust method to enable word recognition.

Consider claim 11, Bellegarda teaches the voice interactive system as claimed in Claim 10, wherein said semantic recognition module includes a database containing a plurality of voice model samples, and a voice model comparing unit coupled to said detecting unit similarity among said database for comparing the built voice models and the voice model samples (For speech, the likelihood of each Markov word model producing the

input utterance is computed, after pruning by the 3-gram LM 38a, and those words resulting in the highest scores are placed on the list of word candidates (L.sub.1). In both cases (speech and handwriting), the size of the list is preferably statically set using a predetermined reasonable maximum size, such as 15, or may be set dynamically using a threshold. In the latter case, all words whose likelihoods fall within the selected threshold are maintained on the list, and the other words discarded; collumn8, lines 48-58. In order to do this, a database must used in order to provide the models to prune from.).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOUGLAS C. GODBOLD whose telephone number is (571)270-1451. The examiner can normally be reached on Monday-Thursday 7:00am-4:30pm Friday 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DCG

/Patrick N. Edouard/
Supervisory Patent Examiner, Art Unit 2626